CLAIMS

1. A substantially pure polypeptide selected from the group consisting of:
(a) a polypeptide comprising the amino acid sequence of SEQ ID NO: 4 or 6;
(b) a polypeptide that comprises the amino acid sequence of SEQ ID NO: 4 or 6 in which one or more amino acids are substituted, deleted, inserted, and/or added and that has a biological activity equivalent to a protein consisting of the amino acid sequence of SEQ ID NO: 4 or 6; and
(c) a polypeptide encoded by a polynucleotide that hybridizes under stringent conditions to a polynucleotide consisting of the nucleotide sequence of SEQ ID NO: 3 or 5, wherein the polypeptide has a biological activity equivalent to a polypeptide consisting of the amino acid sequence of any one of SEQ ID NO: 4 or 6.

2. A substantially pure polypeptide selected from the group consisting of:
(a) a polypeptide consisting of the amino acid sequence of SEQ ID NO: 2; and
(b) a polypeptide that consists of the amino acid sequence of SEQ ID NO: 2 in which one or more amino acids are substituted and/or deleted and that has a biological activity equivalent to a protein consisting of the amino acid sequence of SEQ ID NO: 2.

3. An isolated polynucleotide encoding the polypeptide of claim 1 or 2.

4. A vector comprising the polynucleotide of claim 3.

5. A host cell harboring the polynucleotide of claim 3 or the vector of claim 4.

6. A method for producing the polypeptide of claim 1 or 2, said method comprising the steps of:
(a) culturing the host cell of claim 5;
(b) allowing the host cell to express the polypeptide; and
(c) collecting the expressed polypeptide.

7. An antibody binding to the polypeptide of claim 1.

8. A polynucleotide that is complementary to the polynucleotide encoding the polypeptide of claim 1 or to the complementary strand thereof and that comprises at least 15 nucleotides.

9. An antisense polynucleotide or small interfering RNA against the polynucleotide encoding the polypeptide of claim 1.

10. The small interfering RNA of claim 9, wherein the sense strand thereof is nucleotide sequence of SEQ ID NO:27.

11. A method for diagnosing prostate cancer, said method comprising the steps of:
(a) detecting the expression level of the gene encoding the amino acid sequence of SEQ ID NO: 2, 4 or 6 in a biological sample; and
(b) relating an elevation of the expression level to the disease.

12. The method of claim 11, wherein the expression level is detected by any one of the method select from the group consisting of:
(a) detecting the mRNA encoding the amino acid sequence of SEQ ID NO: 2, 4 or 6,
(b) detecting the protein comprising the amino acid sequence of SEQ ID NO: 2, 4 or 6, and
(c) detecting the biological activity of the protein comprising the amino acid sequence of SEQ ID NO: 2, 4 or 6.

13. A method of screening for a compound for treating or preventing prostate cancer, said method comprising the steps of:
(a) contacting a test compound with a polypeptide selected from the group consisting of:
(1) a polypeptide comprising the amino acid sequence of SEQ ID NO: 2, 4 or 6;
(2) a polypeptide that comprises the amino acid sequence of SEQ ID NO: 2, 4 or 6 in which one or more amino acids are substituted, deleted, inserted and/or added and that has a biological activity equivalent to a protein consisting of the amino acid sequence of SEQ ID NO: 2, 4 or 6; and
(3) a polypeptide encoded by a polynucleotide that hybridizes under stringent conditions to a polynucleotide consisting of the nucleotide sequence of SEQ ID NO: 1, 3 or 5, wherein the polypeptide has a biological activity equivalent to a polypeptide consisting of the amino acid sequence of SEQ ID NO: 2, 4 or 6;
(b) detecting the binding activity between the polypeptide and the test compound; and
(c) selecting a compound that binds to the polypeptide.

14. A method of screening for a compound for treating or preventing prostate cancer, said method comprising the steps of:
(a) contacting a test compound with a polypeptide selected from the group consisting of:
(1) a polypeptide comprising the amino acid sequence of SEQ ID NO: 2, 4 or 6;
(2) a polypeptide that comprises the amino acid sequence of SEQ ID NO: 2, 4 or 6

in which one or more amino acids are substituted, deleted, inserted and/or added and that has a biological activity equivalent to a protein consisting of the amino acid sequence of SEQ ID NO: 2, 4 or 6; and

(3) a polypeptide encoded by a polynucleotide that hybridizes under stringent conditions to a polynucleotide consisting of the nucleotide sequence of SEQ ID NO: 1, 3 or 5, wherein the polypeptide has a biological activity equivalent to a polypeptide consisting of the amino acid sequence of SEQ ID NO: 2, 4 or 6;

(b) detecting the biological activity of the polypeptide of step (a); and

(c) selecting a compound that suppresses the biological activity of the polypeptide in comparison with the biological activity detected in the absence of the test compound.

15. The method of claim 14, wherein the biological activity is cell-proliferating activity.

16. A method of screening for a compound for treating or preventing prostate cancer, said method comprising the steps of:

(a) contacting a test compound with a cell expressing one or more polynucleotides comprising the nucleotide sequence of SEQ ID NO: 1, 3 or 5; and

(b) selecting a compound that reduces the expression level of one or more polynucleotides comprising the nucleotide sequence of SEQ ID NO: 1, 3 or 5 in comparison with the expression level detected in the absence of the test compound.

17. The method of claim 16, wherein the cell is prostate cancer cell.

18. A method of screening for a compound for treating or preventing prostate cancer, said method comprising the steps of:

(a) contacting a test compound with a cell into which a vector comprising the transcriptional regulatory region of one or more marker genes and a reporter gene that is expressed under the control of the transcriptional regulatory region has been introduced, wherein the one or more marker genes comprise any one of nucleotide sequence selected from the group consisting of SEQ ID:NO 1, 3 and 5,

(b) measuring the activity of said reporter gene; and

(c) selecting a compound that reduces the expression level of said reporter gene as compared to a control.

19. A method of screening for a compound for treating or preventing prostate cancer, said method comprising the steps of:

(a) contacting a polypeptide selected from the group consisting of:

(1) a polypeptide comprising the amino acid sequence of SEQ ID NO: 4 or 6;

(2) a polypeptide that comprises the amino acid sequence of SEQ ID NO: 4 or 6 in which one or more amino acids are substituted, deleted, inserted, and/or added and that has a biological activity equivalent to a protein consisting of the amino acid sequence of SEQ ID NO: 4 or 6; and

(3) a polypeptide encoded by a polynucleotide that hybridizes under stringent conditions to a polynucleotide consisting of the nucleotide sequence of SEQ ID NO: 3 or 5, wherein the polypeptide has a biological activity equivalent to a polypeptide consisting of the amino acid sequence of any one of SEQ ID NO: 4 or 6.

with actin in the existence of a test compound;

(b) detecting the binding between the polypeptide and actin; and

(c) selecting the test compound that inhibits the binding between the polypeptide and actin.

20. A composition for treating or preventing prostate cancer, said composition comprising a pharmaceutically effective amount of an antisense polynucleotide or small interfering RNA against a polynucleotide encoding a polypeptide selected from the group consisting of:

(a) a polypeptide that comprises the amino acid sequence of SEQ ID NO: 2, 4 or 6;

(b) a polypeptide that comprises the amino acid sequence of SEQ ID NO: 2, 4 or 6 in which one or more amino acids are substituted, deleted, inserted and/or added and that has a biological activity equivalent to a protein consisting of the amino acid sequence of SEQ ID NO: 2, 4 or 6; and

(c) a polypeptide encoded by a polynucleotide that hybridizes under stringent conditions to a polynucleotide consisting of the nucleotide sequence of SEQ ID NO: 1, 3 or 5, wherein the polypeptide has a biological activity equivalent to a polypeptide consisting of the amino acid sequence of SEQ ID NO: 2, 4 or 6

as an active ingredient, and a pharmaceutically acceptable carrier.

21. The composition of claim 20, wherein the sense strand of the small interfering RNA is nucleotide sequence of SEQ ID NO:23 or 27.

22. A composition for treating or preventing prostate cancer, said composition comprising a pharmaceutically effective amount of an antibody against a polypeptide selected from the group consisting of:

(a) a polypeptide that comprises the amino acid sequence of SEQ ID NO: 2, 4 or 6;

(b) a polypeptide that comprises the amino acid sequence of SEQ ID NO: 2, 4 or 6 in which one or more amino acids are substituted, deleted, inserted and/or added and that has a biological activity equivalent to a protein consisting of the amino acid sequence of SEQ ID NO: 2, 4 or 6; and

(c) a polypeptide encoded by a polynucleotide that hybridizes under stringent conditions to a polynucleotide consisting of the nucleotide sequence of SEQ ID NO: 1, 3 or 5, wherein the polypeptide has a biological activity equivalent to a polypeptide consisting of the amino acid sequence of SEQ ID NO: 2, 4 or 6

as an active ingredient, and a pharmaceutically acceptable carrier.

23. A composition for treating or preventing prostate cancer, said composition comprising a pharmaceutically effective amount of the compound selected by the method of any one of claims 13 to 19 as an active ingredient, and a pharmaceutically acceptable carrier.

24. A method for treating or preventing prostate cancer, said method comprising the step of administering a pharmaceutically effective amount of an antisense polynucleotide, or small interfering RNA against a polynucleotide encoding a polypeptide selected from the group consisting of:

(1) a polypeptide comprising the amino acid sequence of SEQ ID NO: 2, 4 or 6;

(2) a polypeptide that comprises the amino acid sequence of SEQ ID NO: 2, 4 or 6 in which one or more amino acids are substituted, deleted, inserted and/or added and that has a biological activity equivalent to a protein consisting of the amino acid sequence of SEQ ID NO: 2, 4 or 6; and

(3) a polypeptide encoded by a polynucleotide that hybridizes under stringent conditions to a polynucleotide consisting of the nucleotide sequence of SEQ ID NO: 1, 3 or 5, wherein the polypeptide has a biological activity equivalent to a polypeptide consisting of the amino acid sequence of SEQ ID NO: 2, 4 or 6.

25. The method of claim 24, wherein the sense strand of the small interfering RNA is nucleotide sequence of SEQ ID NO:23 or 27.

26. A method for treating or preventing prostate cancer, said method comprising the step of administering a pharmaceutically effective amount of an antibody against a polypeptide selected from the group consisting of:

(a) a polypeptide that comprises the amino acid sequence of SEQ ID NO: 2, 4 or 6;

(b) a polypeptide that comprises the amino acid sequence of SEQ ID NO: 2, 4 or 6 in which one or more amino acids are substituted, deleted, inserted and/or added and that has a biological activity equivalent to a protein consisting of the amino acid

sequence of SEQ ID NO: 2, 4 or 6; and

(c) a polypeptide encoded by a polynucleotide that hybridizes under stringent conditions to a polynucleotide consisting of the nucleotide sequence of SEQ ID NO: 1, 3 or 5, wherein the polypeptide has a biological activity equivalent to a polypeptide consisting of the amino acid sequence of SEQ ID NO: 2, 4 or 6.

27. A method for treating or preventing prostate cancer, said method comprising the step of administering a pharmaceutically effective amount of a compound selected by the method of any one of claims 13 to 19.

28. A method for treating or preventing prostate cancer, said method comprising the step of administering a pharmaceutically effective amount of a polypeptide selected from the group consisting of (a)-(c), or a polynucleotide encoding the polypeptide:

(a) a polypeptide comprising the amino acid sequence of SEQ ID NO: 2, 4 or 6 or fragment thereof;

(b) a polypeptide that comprises the amino acid sequence of SEQ ID NO: 2, 4 or 6 in which one or more amino acids are substituted, deleted, inserted and/or added and that has a biological activity equivalent to a protein consisting of the amino acid sequence of SEQ ID NO: 2, 4 or 6, or fragment thereof;

(c) a polypeptide encoded by a polynucleotide that hybridizes under stringent conditions to a polynucleotide consisting of the nucleotide sequence of SEQ ID NO: 1, 3 or 5, wherein the polypeptide has a biological activity equivalent to a polypeptide consisting of the amino acid sequence of SEQ ID NO: 2, 4 or 6, or fragment thereof.

29. A method for inducing an anti tumor immunity, said method comprising the step of contacting a polypeptide selected from the group consisting of (a)-(c) with antigen presenting cells, or introducing a polynucleotide encoding the polypeptide or a vector comprising the polynucleotide to antigen presenting cells:

(a) a polypeptide comprising the amino acid sequence of SEQ ID NO: 2, 4 or 6, or fragment thereof;

(b) a polypeptide that comprises the amino acid sequence of SEQ ID NO: 2, 4 or 6 in which one or more amino acids are substituted, deleted, inserted and/or added and that has a biological activity equivalent to a protein consisting of the amino acid sequence of SEQ ID NO: 2, 4 or 6, or fragment thereof;

(c) a polypeptide encoded by a polynucleotide that hybridizes under stringent conditions to a polynucleotide consisting of the nucleotide sequence of SEQ ID

NO: 1, 3 or 5, wherein the polypeptide has a biological activity equivalent to a polypeptide consisting of the amino acid sequence of SEQ ID NO: 2, 4 or 6, or fragment thereof.

30. The method for inducing an anti tumor immunity of claim 29, wherein the method further comprising the step of administering the antigen presenting cells to a subject.

31. A pharmaceutical composition for treating or preventing a cancer, said composition comprising a pharmaceutically effective amount of polypeptide selected from the group of (a)-(c), or a polynucleotide encoding the polypeptide:

(a) a polypeptide comprising the amino acid sequence of SEQ ID NO: 2, 4 or 6, or fragment thereof;

(b) a polypeptide that comprises the amino acid sequence of SEQ ID NO: 2, 4 or 6 in which one or more amino acids are substituted, deleted, inserted and/or added and that has a biological activity equivalent to a protein consisting of the amino acid sequence of SEQ ID NO: 2, 4 or 6, or fragment thereof;

(c) a polypeptide encoded by a polynucleotide that hybridizes under stringent conditions to a polynucleotide consisting of the nucleotide sequence of SEQ ID NO: 1, 3 or 5, wherein the polypeptide has a biological activity equivalent to a polypeptide consisting of the amino acid sequence of SEQ ID NO: 2, 4 or 6, or fragment thereof

as an active ingredient, and a pharmaceutically acceptable carrier.

32. The pharmaceutical composition of claim 31, wherein the polynucleotide is incorporated in an expression vector.

33. A diagnostic agent comprises an oligonucleotide that hybridizes to the polynucleotide encoding the polypeptide of claim1, or an antibody that binds to the polypeptide of claim 1.